



ACSM Information On...

SELECTING RUNNING SHOES

Running shoes should be selected after careful consideration. With so many brands and styles of shoes on the market today, it is important to find the best fit for your feet and your needs. There is no “right shoe” that fits all runners. However, research and injury patterns have shown that there are some general characteristics of a good, safe running shoe.

A Complete Physical Activity Program

A well-rounded physical activity program includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2011, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:

- Walking
- Running
- Stair climbing
- Cycling
- Rowing
- Cross-country skiing
- Swimming

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

A running shoe should protect the feet against injury, but should not do the work of the foot by providing excessive cushioning and lots of extra support in the arch. A shoe should complement a strong foot. With new companies and shoe options on the market, you can do a bit of research online to find the types of shoes that may interest you. Review the specifications on shoe material, weight and heel to toe drop to find brands that follow the general guidelines below.

Characteristics of a good, safe running shoe include:

- Minimal heel-to-toe drop: This drop is the difference in the thickness of the heel cushion to the thickness in the forefoot cushion area. Shoes with no drop or a small drop 6mm or less are the best choice for allowing the foot to normally support loading during each gait cycle
- Neutral: This means the shoe does not contain motion control or stability components. These extra components interfere with normal foot motion during weight bearing.
- Light in weight: (10 ounces or less for a men's size 9; 8 ounces or less for women's size 8)

Where can you look for running shoes?

Check in with a local running club and ask the leadership where their members commonly purchase shoes, or which merchants have

knowledgeable staff who have expertise with running shoes.

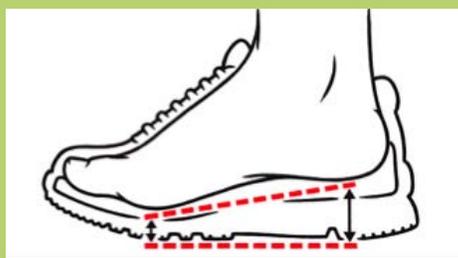
How to buy a running shoe:

- Every time you shop for running shoes, have your feet sized in the store. Be aware that you may have different sized right and left feet. For some runners, buying shoes of slightly different sizes may be best. Forcing a shoe that is too tight on one foot will cause foot pain over time.
- Foot shape or arch height are not good indicators of what kind of running shoe to buy.
- Avoid buying shoes based on advice given after someone in a store has watched you walk. Your gait and foot motion are very different when you walk and run.
- Be aware that all runners pronate, or drop the foot inward. Pronation is a normal foot motion during walking and running. Pronation alone should not be a reason to select a running shoe. Runners may be told while shopping that because pronation is occurring, a shoe with arch support is best. In fact, the opposite may be true. Pronation should occur and is a natural shock absorber. Stopping pronation with materials in the shoes may actually cause foot or knee problems to develop. Excessive pronation can occur, but in most cases can be corrected with therapy and exercises to strengthen the foot, leg and hip rather than by a shoe.

- Buy running shoes at the end of the day when your feet have ‘swollen’ as much as they will and the shoes will not feel tight.
- Be sure the shoe has a wide toe box. The toe box is the area where your forefoot and toes are. You should be able to wiggle your toes easily. Narrow toe boxes do not permit the normal splay, or spread of the foot bones during running. This will prevent your feet from being able to safely distribute the forces during the loading phase of gait.
- There should be at least ½ inch of room between the toes and front of shoe, about enough space to place your thumb between your big toe and the front of the shoe.
- Test the shoe to determine if it is too narrow: take the insert out of the shoes and step on them on the ground. Does your foot hang over the sides of the insert? If so, your shoe is too narrow.
- When you test running in the shoe, be sure that the heel does not slip.

Shoe Qualities to Avoid:

- High, thick cushioning: Soft cushioning may actually encourage runners to adopt worse biomechanics and land with greater impact than shoes with less cushioning.
- Shoes that have a high heel cushion and low forefoot cushion (a “high profile shoe”, or a high heel to toe drop)
- Extra arch support inserts or store based orthotics. These items are often not necessary. Orthotics should be considered temporary fixes (<6-8 weeks) until foot strength is increased. A therapist can help you with exercises that can strengthen the foot so that you do not need arch supports on a daily basis.



Transition from old to new shoe

Be aware that when you change from one shoe to another, there should be a transition period in which you may need to wear the new shoes for part of a run. Over a couple weeks, the time wearing the new shoe can increase until the entire run is performed with the new shoe.

Exercises to increase foot and hip strength should be done before and as you transition to the new shoe. When initially exercising in shoes with minimal drop, the lower extremities will need to adapt by activating muscles in the hip and gluteal (buttock) area. There may be some initial soreness in these muscle areas for the first couple of weeks.

If you are switching from a shoe with a high heel-to-toe drop to a shoe with a low or zero drop, consider using a transition shoe with a moderate heel-to-toe drop for a few months while you adapt; after this adaptation, then switch to the shoe with minimal or zero drop.

When should you buy new running shoes?

- A general rule of thumb is to purchase new shoes for every 350 miles, but limited science has not identified the ideal time frame for all running shoes. Different shoes will vary in wear based on what materials they are made from, and whether the shoes are used for more than running. Faster wear may occur if the shoes are used for other activities on a daily basis than if they were used for running alone.
- If there are wear patterns on the shoe that reveal the sole layers underneath, discard the shoes. Uneven wear on the shoe sole causes changes in running mechanics that lead to injury.

Staying Active Pays Off!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity – such as 30 minutes a day of brisk walking – significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more – regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

The First Step

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine if you're ready to begin an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance from dizziness? Do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or a heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have recently been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it's likely that you can safely begin exercising.

Prior to Exercise

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.



Brochure content provided by Heather K. Vincent, Ph.D. and Kevin R. Vincent, M.D., Ph.D.